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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,389

08/31/2006

Matthew Tilbrook

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EXAMINER

MESH, GENNADIY

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,389	<b>Applicant(s)</b> TILBROOK, MATTHEW	
	<b>Examiner</b> GENNADIY MESH	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/27/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1.1. Claims 13 - 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, because claim 13 recites : " A method according to claim 1 wherein the base is added to the **alcohol solution following formation of alcohol**".

It is not clear why and how alcohol formed when base added to alcohol solution and how this related to method of manufacturing of acrolein polymer claimed by Applicant. In addition note, that Specification or claims do not provide any teaching or explanation related to this language of Claim 13. Therefore, subject matter of Claim 13 is indefinite.

For examination on the merits language of Claim 13 will be understood as :"  
A method according to claim 1 wherein the base is added to the **alcohol solution of acrolein polymer**" based on guidance provided by paragraph [0018] of Applicant's Specification:

"[0018] The process of the invention includes a step of adding base to the composition; the base is generally added to the alcohol solution following the heating step. The pH of the resulting solution of is preferably in the range of from 7 to 9.5 and more preferably is from 7.5 to 8.5. The preferred base for addition to the alcohol solution of polyacrolein

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is an alkali metal carbonate particularly sodium carbonate or potassium carbonate.

Alkaline metal hydroxide such as sodium hydroxide or potassium hydroxide may also be used but are less preferred. Typically the alkali is added as an aqueous solution.

Preferably the solution is cooled to room temperature before adding the base in the above step".

1.2. Regarding claims 16 and 17 (as dependent on 17) note, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Also note, that Claim 16 should have comma after "alkali metal carbonate".

1.3 Claims 23-27 are provide for the use of Acrolein polymer, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 23 - 27 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 - 13, 16 - 19 and 22 are rejected under 35 U.S.C. 102( b) as anticipated by Werle et al.( AU 11686/95 - reference cited by Applicant).

Regarding Applicant's Claim 1 and 22 Werle discloses method of manufacturing acrolein polymer comprising following steps:

- a) polymerization of acrolein in a presence of base ( see page 2, lines 2 - 10)
- b) washing acrolein polymer with water, discharging solid acrolein particles with water content about 35% from centrifuge, dissolving solid acrolein particles in polyhydric alcohols and heating solution at 40<sup>0</sup> C to 50<sup>0</sup> C ( see page 2, lines 14 - 23). Note, that Werle silent regarding pH of dissolving step, but because polymer was washed with water, it is reasonable assume that pH should be about 7 as required by language of Claim 1.
- d) Werle further discloses that small quantity of organic or inorganic base can be added to alcoholic solution ( see page 3, lines 15 - 18)

Thus, all steps required by language of Claim 1 are meet by reference.

Regarding Claims 2 and 3 Werle discloses acrolein homopolymer. Note, that limitation of Claim 2 as " up to 10% by weight" does not require presence of co-monomer.

Regarding Claim 5 : process disclosed by Werle does not require step of oxidation of acrolen polymer in air.

Regarding claims 4 and 7 see step b) above.

Regarding Claim 8 see Werle page 2, lines 21 - 23.

Regarding Claim 9 note, that because method of Werle is same as claimed by Applicant in Claim 1, than acrolein polymer disclosed by Werle will inherently poses same properties, including solubility in alcohol.

Regarding Claims 11 and 12 note, that because method of Werle is same as claimed by Applicant in Claim 1, than acrolein polymer disclosed by Werle will have same amount of carboxyl groups.

Regarding Claim 13 Werle discloses use of sodium hydroxide - see page 3, lines 15 - 19.

Regarding Claim 16 and 17 note, that use of base as sodium hydroxide disclosed by Werle ( see page 3, lines 15-19). Also note , that presence of bases as sodium carbonate or potassium carbonate are not required by language of Claims 16 and 17. Regarding Claims 18 and 19 Werle discloses that acrolein polymer may be present in alcohol solution in amount up to 30 wt% ( see page 2, line 24).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3.1. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werle et al.( AU 11686/95 - reference cited by Applicant) in view of Werle et al( AU 711548 - hereafter Werle '548' , reference cited by Applicant).

Discussion with respect to Werle above ( see paragraph 2) incorporated herein by reference.

As it was discussed above, Werle discloses that small amount of base can be added to alcoholic solution of acrolein polymer( see page 3, lines 15 - 19), but silent regarding pH of the solution.

However, Werle '548' teach, that if pH higher than 7 of acrolein releasing polymers prepared from acrolein and one or more polyhydric alcohols than they " have a prolonged effect on microorganisms" - see claim 1 on page 18 and Fig.1.

Therefore, it would be obvious to one of ordinary skill in the art to adjust pH of acrolein polymer solution disclosed by Werle to pH more than 7 per teaching of Werle '548' in order to " have a prolonged effect on microorganisms".

3.2. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werle et al.( AU 11686/95 - reference cited by Applicant) in view of Melrose et al.( WO 01/60874 - reference cited by Applicant. Note that for simplification purposes US 6,803,356 as equivalent of WO 01/60874 will be used in rejection below).

Discussion with respect to Werle above( see paragraph 2) incorporated herein by reference.

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As it explained above, Werle discloses same manufacturing process as claimed by Applicant, but silent regarding use of specific alcohol as polyethylene glycol as it claimed by claims 20 and 21.

However, Melrose teach that acrolein based polymer can be prepared in presence of PEG - polyethylene glycols ( see abstract) and specifically in presence of PEG 200 ( 200 indicated molecular weight of polyethylene glycol) or PEG 1000 ( see Examples) and pointing out that presence of PEG results in greater physical and chemical stabilities( see column 6, lines 64-65).

Therefore, it would be obvious to one of ordinary skill in the art to use PEG as specific alcohol per teaching of Melrose in process of manufacturing of acrolein polymer disclosed by Werle.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GENNADIY MESH whose telephone number is (571)272-2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gennadiy Mesh  
Examiner  
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